

Docket No.  
524941/0003  
LR:DLS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: **Seiichi Hirano et al.**

Group Art Unit: **2853**

Application No.: **08/834,151**

Examiner: **M. Brooke**

Filed: **April 14, 1997**

For: **PRINTER INCLUDING  
AN INK CARTRIDGE**

Reissue of: **U.S. Patent No. 6,024,207**

Issued: **February 22, 2000**

Date: **October 11, 2001**

**STATEMENT OF STATUS AND SUPPORT  
FOR ALL CHANGES TO THE CLAIMS (37 C.F.R. §1.173(c)),  
FOREIGN PRIORITY CLAIM and PRELIMINARY AMENDMENT**

Box REISSUE  
Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to the examination of this Reissue application, please amend the claims as follows:

**IN THE CLAIMS:**

Please add new claims 24-35 as follows:

24. (New) An ink jet printer for use with an ink jet head having a nose portion through which ink is ejected, comprising:

a paper feeding path which guides a sheet of printing paper in a direction from a paper feeding side to a paper discharging side;

a paper feed roller having a peripheral surface coincident with a portion of said paper feeding path;

a driving device operatively coupled to said paper feed roller and selectively rotating said paper feed roller;

a presser abutting said paper feed roller at a contact position, the contact position being located on said paper feeding path, so that when said paper feed roller is rotated by said driving device the sheet of printing paper is moved along said paper feeding path;

a flat paper guide surface disposed in said paper feeding path downstream of the contact position;

a printing area located between the flat paper guide surface and the ink jet head and corresponding to a region over which ink can be applied by ejection by the ink jet head; and

a plurality of projections disposed on said paper guide surface, at least some of which said projections being at least in part disposed inside of the printing area which is located between the contact position where said presser abuts said feed roller and a position where the nose portion of the ink jet head opposes said paper guide surface across said paper feeding path when the ink jet head ejects ink, the projections being arranged at intervals in a direction approximately transverse to said printing paper for supporting the sheet of paper moving along said paper feeding path.

25. (New) An ink jet printer according to claim 24, wherein the presser comprises a pinch roller.

26. (New) An ink jet printer according to claim 24, further comprising a deflector located downstream of and apart from the contact position and which deflects the sheet of paper toward the projections.

27. (New) An ink jet printer according to claim 26, wherein at least one of the presser, the deflector and the plurality of projections extends across a full width of the sheet of paper.

28. (New) An ink jet printer for use with an ink jet head having a nose portion through which ink is ejected, comprising:

a paper feeding path which guides a sheet of printing paper in a direction from a paper feeding side to a paper discharging side;

a paper feed roller having a peripheral surface coincident with a portion of said paper feeding path;

a driving device operatively coupled to said paper feed roller and selectively rotating said paper feed roller;

a presser abutting said paper feed roller at a contact position, the contact position being located on said paper feeding path, so that when said paper feed roller is rotated by said driving device the sheet of printing paper is moved along said paper feeding path;

a flat paper guide surface disposed in said paper feeding path downstream of the contact position ; and

a plurality of projections disposed on said paper guide surface, at least some of which said projections are at least in part disposed inside of the printing area which is located between the contact position where said presser abuts said feed roller and the point where the

nose portion of the ink jet head opposes said paper guide surface, the projections being arranged at intervals in a direction approximately transverse to said printing paper for supporting the sheet of paper moving along said paper feeding path.

29. (New) An ink jet printer according to claim 28, wherein the presser comprises a pinch roller.

30. (New) An ink jet printer according to claim 28, further comprising a deflector located downstream of and apart from the contact position and which deflects the sheet of paper toward the projections.

31. (New) An ink jet printer according to claim 30, wherein at least one of the presser, the deflector and the plurality of projections extends across a full width of the sheet of paper.

32. (New) An ink jet printer for use with an ink jet head having a nose portion through which ink is ejected, comprising:

a paper feeding path which guides a sheet of printing paper in a direction from a paper source to a paper exhaust;

a paper feed roller having a peripheral surface coincident with a portion of said paper feeding path;

a driving device operatively coupled to said paper feed roller and selectively rotating said paper feed roller;

a presser abutting said paper feed roller at a contact position, the contact position being located on said paper feeding path, so that when said paper feed roller is rotated by said driving device the sheet of printing paper is moved toward said paper exhaust; and

a flat paper guide surface disposed in said paper feeding path downstream of the contact position, the flat paper guide surface having a plurality of projections between the contact position and the paper exhaust for supporting the sheet of paper moving along said paper feeding path.

33. (New) An ink jet printer according to claim 32, wherein the presser comprises a pinch roller.

34. (New) An ink jet printer according to claim 32, further comprising a deflector located downstream of and apart from the contact position and which deflects the sheet of paper toward the projections.

35. (New) An ink jet printer according to claim 34, wherein at least one of the presser, the deflector and the plurality of projections extends across a full width of the sheet of paper.

### **REMARKS**

Consideration of this reissue application and preliminary amendment are respectfully requested.

**STATUS OF CLAIMS (37 C.F.R. § 1.173(c))**

Patent claims 1-23 are pending in the application and have been maintained unchanged. Through this Preliminary Amendment, Applicants seek to add new claims 24-35. Upon entry of this Preliminary Amendment, claims 1, 4, 15, 17, 20, 21, 24, 28 and 32 will be independent.

**FOREIGN PRIORITY CLAIM (35 U.S.C. § 119)**

As indicated in the attached "REISSUE APPLICATION DECLARATION BY THE INVENTORS", Applicants herein claim foreign priority benefits of the following Japanese Patent Applications:

4-242228, filed September 10, 1992  
4-242229, filed September 10, 1992  
4-242230, filed September 10, 1992  
4-267621, filed October 6, 1992  
4-270561, filed October 8, 1992  
4-270562, filed October 8, 1992  
4-270563, filed October 8, 1992  
4-270567, filed October 8, 1992

Certified copies of each of these priority documents were filed in the application on which the patent-in-reissue was granted.

**EXPLANATION OF SUPPORT IN THE DISCLOSURE  
FOR NEW CLAIMS 24-35 (37 C.F.R. § 1.173(c))**

Claim 24 is directed to an ink jet printer (Figs. 1-3A; col. 10, lines 56-58) for use with an ink jet head having a nose portion (Figs. 23, 29 and 31, element 90) through which ink is ejected. The printer includes a paper feeding path which guides a sheet of printing paper in a direction from a paper feeding side to a paper discharging side (Fig. 3A, element 202; col. 18, lines 16-23 and col. 20, lines 30-67), a paper feed roller having a peripheral surface coincident with a portion of the paper feeding path (Figs. 27-31, element 330; col. 14, lines 25-30), and a

driving device operatively coupled to the paper feed roller and selectively rotating the paper feed roller (Fig. 17, element M1; col. 16, lines 12-13 and 40-46). A presser abuts the paper feed roller at a contact position, and the contact position is located on the paper feeding path (Figs. 17, 29 and 31, element 350), so that when the paper feed roller is rotated by the driving device the sheet of printing paper is moved along the paper feeding path (Col. 14, lines 25-30; col. 16, lines 40-47). A flat paper guide surface is disposed in the paper feeding path downstream of the contact position (Figs. 27-31, element 112; col. 17, lines 50-52). A printing area is located between the flat paper guide surface and the ink jet head and corresponds to a region over which ink can be applied by ejection by the ink jet head (Figs. 29 and 31, element PA; col. 11, lines 25-27, col. 14, lines 25-29, and col. 17, lines 50-52). Plural projections are disposed on the paper guide surface, at least some of which projections are at least partially disposed inside of the printing area which is located between the contact position where the presser abuts the feed roller and a position where the nose portion of the ink jet head opposes the paper guide surface across the paper feeding path when the ink jet head ejects ink (Figs. 27-31, elements 113 and col. 17, lines 58-61). The projections are arranged at intervals in a direction approximately transverse to the printing paper for supporting the sheet of paper moving along the paper feeding path (Col. 18, lines 8-15 and 33-44).

Claim 25 depends from claim 24, and provides that the presser is a pinch roller (Figs. 17, 29 and 31, element 350).

Claim 26 depends from claim 24, and provides that the printer includes a deflector located downstream of and apart from the contact position. The deflector deflects the sheet of paper toward the projections (Fig. 27-29 and 31, elements 140 and 141; col. 18, lines 1-7).

Claim 27 depends from claim 26 and provides that at least one of the presser (Fig. 17, element 350), deflector (Fig. 27-29 and 31, elements 140 and 141) and plural projections (Fig. 30, elements 113) extends across the full width of the sheet of paper.

Claim 28 is drawn to an ink jet printer (Figs. 1-3A; col. 10, lines 56-58) for use with an ink jet head having a nose portion (Figs. 23, 29 and 31, element 90) through which ink is ejected. The printer has a paper feeding path which guides a sheet of printing paper in a direction from a paper feeding side to a paper discharging side (Fig. 3A, element 202; col. 18, lines 16-23 and col. 20, lines 30-67), a paper feed roller having a peripheral surface coincident with a portion of the paper feeding path (Figs. 27-31, element 330; col. 14, lines 25-30), a driving device operatively coupled to and selectively rotating the paper feed roller (Fig. 17, element M1; col. 16, lines 12-13 and 40-46), and a presser abutting the paper feed roller at a contact position located on the paper feeding path (Figs. 17, 29 and 31, element 350). When the paper feed roller is rotated by the driving device the sheet of printing paper is moved along the paper feeding path (Col. 14, lines 25-30; col. 16, lines 40-47). A flat paper guide surface is disposed in the paper feeding path downstream of the contact position (Figs. 27-31, element 112; col. 17, lines 50-52), and plural projections are present on the paper guide surface, at least some of which projections are located inside of the printing area between the contact position where the presser abuts the feed roller and the point where the nose portion of the ink jet head opposes the paper guide surface (Figs. 27-31, elements 113; col. 17, lines 58-61). The projections are arranged at intervals in a direction approximately transverse to the printing paper for supporting the sheet of paper moving along the paper feeding path (Figs. 27-31, elements 113; col. 17, lines 58-61).



Claim 29 depends from claim 28 and provides that the presser includes a pinch roller (Figs. 17, 29 and 31, element 350).

Claim 30 depends from claim 28, and provides that the printer includes a deflector located downstream of and apart from the contact position. The deflector deflects the sheet of paper toward the projections (Fig. 27-29 and 31, elements 140 and 141; col. 18, lines 1-7).

Claim 31 depends from claim 30 and provides that at least one of the presser (Fig. 17, element 350), deflector (Fig. 27-29 and 31, elements 140 and 141) and plural projections (Fig. 30, elements 113) extends across the full width of the sheet of paper.

Claim 32 is directed to an ink jet printer (Figs. 1-3A; col. 10, lines 56-58) for use with an ink jet head having a nose portion (Figs. 23, 29 and 31, element 90) through which ink is ejected. This printer includes a paper feeding path which guides a sheet of printing paper in a direction from a paper source to a paper exhaust (Fig. 3A, element 202; col. 18, lines 16-23 and col. 20, lines 30-67), a paper feed roller having a peripheral surface coincident with a portion of the paper feeding path (Figs. 27-31, element 330; col. 14, lines 25-30), a driving device operatively coupled to and selectively rotating the paper feed roller (Fig. 17, element M1; col. 16, lines 12-13 and 40-46), and a presser abutting the paper feed roller at a contact position located on the paper feeding path (Figs. 17, 29 and 31, element 350). When the paper feed roller is rotated by the driving device the sheet of printing paper is moved toward the paper exhaust (Col. 14, lines 25-30; col. 16, lines 40-47). The printer also has a flat paper guide surface disposed in the paper feeding path downstream of the contact position (Figs. 27-31, element 112; col. 17, lines 50-52), as well as plural projections between the contact position and the paper exhaust for supporting the sheet of paper moving along the paper feeding path (Figs. 27-31, elements 113; col. 17, lines 58-61; col. 18, lines 8-15 and 33-44).

Claim 33 depends from claim 32 and provides that the presser includes a pinch roller (Figs. 17, 29 and 31, element 350).

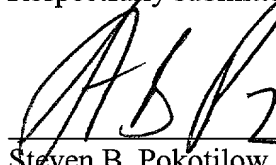
Claim 34 depends from claim 32, and provides that the printer includes a deflector located downstream of and apart from the contact position. The deflector deflects the sheet of paper toward the projections (Fig. 27-29 and 31, elements 140 and 141; col. 18, lines 1-7).

Claim 35 depends from claim 34 and provides that at least one of the presser (Fig. 17, element 350), deflector (Fig. 27-29 and 31, elements 140 and 141) and plural projections (Fig. 30, elements 113) extends across the full width of the sheet of paper.

### CONCLUSION

Favorable consideration and prompt allowance of this reissue application is respectfully requested. In the event that there are any questions, or should additional information be required, please do not hesitate to contact patentee's attorney at the number listed below.

Respectfully submitted,



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